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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,892	07/22/2003	Charles L. Mitchell	3382-65679	1536

26119   7590   11/28/2005

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EXAMINER
CHAVIS, JOHN Q

ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.

10/625,892</td><td>Applicant(s)

MITCHELL ET AL.</td></tr>
<tr><td>Examiner

John Chavis</td><td>Art Unit

2193</td></tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 March 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-46</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-46</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/22/03, 7/30/04.</u>
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: <u>IDS 11/14/05</u>.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-46 are rejected under 35 U.S.C. 102(e) as being anticipated by

Radigan (2004/0098710).

Claims	Radigan
1. One or more computer-readable media having encoded thereon a computer-readable data structure storing an intermediate representation of software, the data structure comprising:	See sect. 0004.
a plurality of instruction nodes representing a plurality of instructions of the software;	See the abstract of the invention.
wherein the instruction nodes are operable to represent the instructions in a machine-dependent manner and are further operable to represent the instructions in a machine-independent manner.	See sect. 0003, which provides a machine independent component and means for retargeting for many different processors (machine dependent).
2. The computer-readable media of claim 1 wherein instructions are uniformly represented by a format for specifying at least the following for an instruction: an operator; any number of or no destination operands associated with the operator via the format; and any number of or no source	See sect. 0035, which provides the ability to integrate various media and create reusable modules. The features inherently has an operator to enable optimization to another environment, see the abstract.

operands associated with the operator via the format.

The features of any number or no destination and source operands are considered provided for Via items 220 and 240 of fig. 2.

3. The computer-readable media of claim 1 wherein instructions are uniformly represented by a format for specifying an instruction node, zero or more destination operand nodes, and zero or more source operand nodes.

See the rejection of claim 2.

4. The computer-readable media of claim 1 wherein the data structure further comprises: a plurality of operand nodes associated with the instruction nodes, wherein the operand nodes represent a plurality of operands of the instructions of the software.

See sects. 0020-0021.

5. The computer-readable media of claim 4 wherein at least one data flow graph is threaded through the operand nodes.

"   "   "   "

6. The computer-readable media of claim 5 wherein the data flow graph comprises an SSA representation.

See sect. 0038 and 0040.

7. The computer-readable media of claim 4 wherein the operand nodes are further operable to be annotated to explicitly indicate at least one data flow graph for the software.

Note the definitions, ESSA encoding, and names are all considered annotations that indicate at least one data flow graph for the software, see sects. 0041-0042 and 0050.

8. The computer-readable media of claim 4 wherein the nodes of the data structure are further operable to store information explicitly indicating at least one data flow graph for the software without constructing a separate data structure therefor.

See sects. 0035, which provides for the ability to reuse modules (without constructing...) via mapping, see sect. 0041.

9. The computer-readable media of claim 4 wherein the nodes of the data structure

See the rejection of claim 8.

are further operable to store information explicitly indicating at least one control flow graph for the software without constructing a separate data structure for the control flow graph.

10. The computer-readable media of claim 9 wherein the control graph for the software is indicated by associating at least one control flow operation to at least one target label via a control flow edge.

"   "   "   "

11. The computer-readable media of claim 9 wherein the control graph for the software is indicated by associating at least one exception causing instruction to at least one instance of exception handling code via a control flow edge.

See sects. 0064-0069.

12. The computer-readable media of claim 1 wherein the data structure further comprises: a representation of non-instruction data of the software stored as an instruction.

See the functions that are not defined in sect.0040.

13. The computer-readable media of claim 12 wherein the data structure further comprises: a representation of instruction data of the software stored as a data instruction.

"   "   "   "

14. The computer-readable media of claim 1 wherein: the data structure represents a lowered form of the software; and at least one operand preserves type information specified in source code for the software.

The reusing and mapping features discussed in claim 8 inherently preserves typing information. See also sect. 0082, which provides for type Verification (possibly preserving type information.

15. The computer-readable media of claim 4 wherein: at least one operand node is annotated with alias information.

See the abstract types in sect. 0051.

Claim 16 is rejected as claim 7.

In reference to claims 17 and 19, see the rejection of claim 5.

As per claim 18, see the rejection of claim 10.

The features of claims 20, 21 and 33 are taught via claim 11.

Claims 22, 44 and 46 are rejected as claim 1.

In reference to claim 23, see the rejection of claim 9.

As per claims 24-28, and 34, the rejection of claim 7.

The features of claims 29-30, 43 and 32 are taught via claim 9.

Claim 31 is rejected as claim 14.

In reference to claim 35, see the rejection of claim 15.

As per claim 36, see the rejection of claim 7.

The features of claims 37-39 are taught via claim 7.

Claims 40-42 are rejected as claim 10.

In reference to claims 45, see the rejection of claim 11.

As per claim 18, see the rejection of claim 10.

3.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to John Chavis whose telephone number is (571) 272-
3720. The examiner can normally be reached on M-Th, 8:30am-5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for
the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

JC

John Chavis
Primary Examiner AU-2193